Potomac Highlands Labor Market Study 2000

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Executive Summary

Human capital represents one of the most vital resources of a region's economy. The quality of a region's labor force may have significant impacts on the short-run and long-run well-being of a local economy. This report examines the quality of the Potomac Highlands Region's labor force. This study, funded by the Region VIII Planning and Development Council, will allow educators to identify those specific areas on which to focus that would strengthen the quality of the region's labor force. In addition, economic developers may use the results to showcase existing strengths of the labor force for the purpose of future economic development activities.

The Potomac Highlands Region is composed of Grant, Hampshire, Hardy, Mineral and Pendleton counties. Keyser, Petersburg, Moorefield, Romney, Carpendale and Piedmont are the major cities located in the region. There are no interstate highways that pass through the region, but it is served by three U.S. highways: U.S. 33, U.S. 50, and U.S. 220.

Population growth trends in the Potomac Highlands Region have been markedly different from West Virginia. While West Virginia lost residents at a high rate during the 1980s, the Potomac Highlands Region's population remained stable. During 1990s the region substantially outpaced the state's population growth and is projected to continue for the next twenty years. The region's demographic characteristics, such as age distribution and migration patterns, are quite similar to that of West Virginia.

The Potomac Highlands Region has a lower proportion of its adult population with post-secondary degrees (degrees beyond a high school diploma or GED) than the state or nation. In addition, a higher percentage of adult residents have less than a ninth grade education.

The unemployment rate in the Potomac Highlands Region has remained below the state's rate throughout the past two decades, approaching the rate of the nation between 1993 and 1997. Growth in the number of employed residents within the region surpassed the state during the 1980s and 1990s, but has slowed down since 1996. The labor force participation rate, i.e. those persons holding a job or actively searching for a job, exceeds the state's rate, but still lags behind the nation.

The number of jobs in the region has significantly outpaced the state and at times outpaced growth at the national level. The region's diverse industrial composition and recovery from recessionary periods facilitated strong job growth in the region. Gains in food and kindred products, which includes poultry processing, and the lumber and wood products industries have made significant contribution's to the Potomac Highlands Region's economy. While the region displayed strong job growth during the 1980s and 1990s, real average annual wages have declined during this same time period. The

region's average annual wage rates remained below that of the state in nearly all industry divisions except for the transportation, communications, and public utilities industry.

The composition of jobs by occupational category shows that the Potomac Highlands Region specializes in blue collar jobs. Approximately 40 percent of occupational employment in 1994 in the region was classified as blue collar. However, service occupations are forecasted to contribute the highest percentage to overall employment growth from 1994 through 20005.

Commuting patterns data indicate that the region is a net exporter of employed residents. Grant County is the only county in the region that has more workers commuting into the county for employment than it has residents leaving the county to work. Based on the commuting patterns, we identify two types fo multi-county labor market regions, in-flow and out-flow labor market regions. In-flow Labor Market Regions identify those countyies that supply a significant proportion of workers to a particular county. Out-flow Labor Market Regions identify the counties to which a significant proportion of a particular county's residents commute to for employment. Labor force statistics, i.e. employed and unemployed residents as well as the rate of unemployment, for the In-flow Labor Market Regions provide information about the region that is supplying the workers. Average annual employment by major industry for the Out-flow Labor Market Regions provide information regarding the industrial structure of the region that is attracting county residents. Ultimately, this type of regional labor market analysis outlines additional information beyond what could be obtained by examining each individual county.

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Introduction

Human capital represents one of the most vital resources of a region's economy. The quality of a region's labor force may have significant impacts on the short-run and long-run well-being of a local economy. Thus, the task of examining the relative strengths and weaknesses of a region's labor force becomes increasingly significant. This report uses various types of economic and demographic characteristics to measure the quality of the Potomac Highlands Region's labor force.

We begin with a physical description of the Potomac Highlands Region (referred to as PHR) by defining the study area, major cities, and major highways located in the area. The subsequent section describes the demographic characteristics of the PHR, including historical trends in population, projected population growth, distribution of the population by age groups, and migration patterns. This is followed by sections that discuss the levels of educational attainment of the adult population and current public school enrollment. Section six examines trends in the number of employed residents and unemployment rate, as well as the region's labor force participation rate. The next section reports information on the jobs located in the PHR, including such statistics as employment by industry and average annual wages by industry. Section eight breaks down the PHR's employment by occupation as well as the fastest-growing levels of forecasted occupational employment. The final section examines the commuting patterns of the region's workforce in order to develop functional labor market regions for in-commuting and out-commuting workers.

This report will serve several purposes. First of all, educators may identify those specific need areas on which to focus that would strengthen the quality of the region's labor force. Secondly, economic developers may use the results to showcase existing strengths of the labor force for the purpose of future economic development activities. The data represented in this report are available from the West Virginia University Bureau of Business and Economic Research.

The Potomac Highlands Region

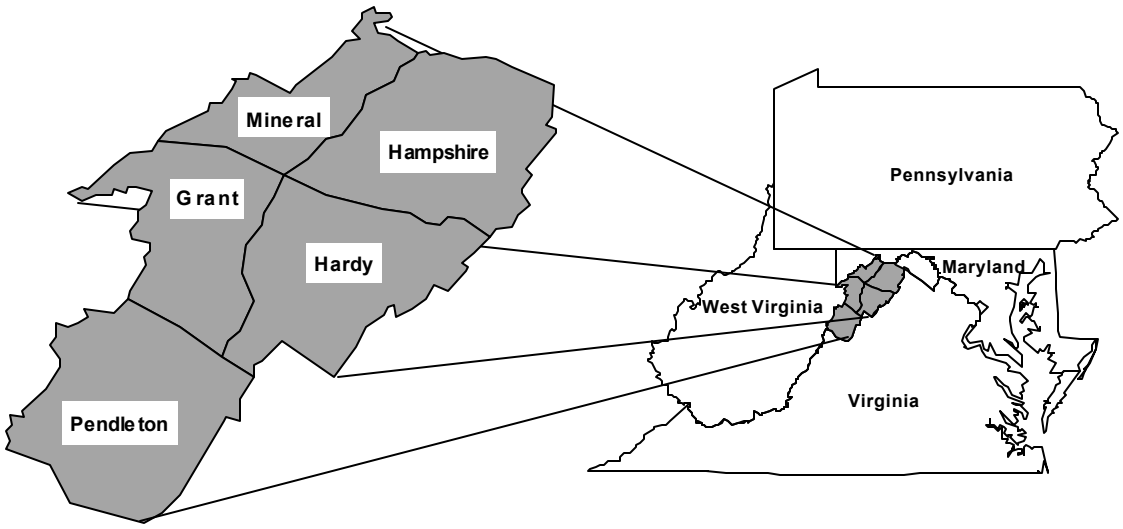
The Potomac Highlands Region (PHR) is composed of Grant, Hampshire, Hardy, Mineral and Pendleton counties. Keyser, Petersburg, Moorefield, Romney, Carpendale, and Piedmont are the major cities located in the region. There are no interstate highways that pass through the PHR, but it is served by three U.S. highways: U.S. 33, U.S. 50, and U.S. 220.

Definition of the Potomac Highlands Region

For this study, the Potomac Highlands Region is the five-county portion of West Virginia's Eastern Panhandle comprised of Grant, Hampshire, Hardy, Mineral, and Pendleton counties. Figure 1 illustrates the relative location of the PHR with respect to West Virginia and the surrounding states of Maryland, Virginia, and Pennsylvania.

Mineral County makes up part of the Cumberland Metropolitan Statistical Area (MSA), along with Allegany County, Maryland. However, an overwhelming majority (88 percent) of the PHR's residents live in rural/non-metropolitan areas. The PHR earns its name due to the location of numerous mountainous ridges and valleys that run southwest to northeast in the western and southern parts of the region. Spruce Knob, located in Pendleton County, is designated West Virginia's highest point with an elevation of 4,861 feet above sea level. Other physical features located in the PHR are the various forks and branches of the Potomac River. The North Branch of the Potomac River traces along the northern edge of the region, while the forks of the Potomac's South Branch run down the valleys of the PHR from the south.

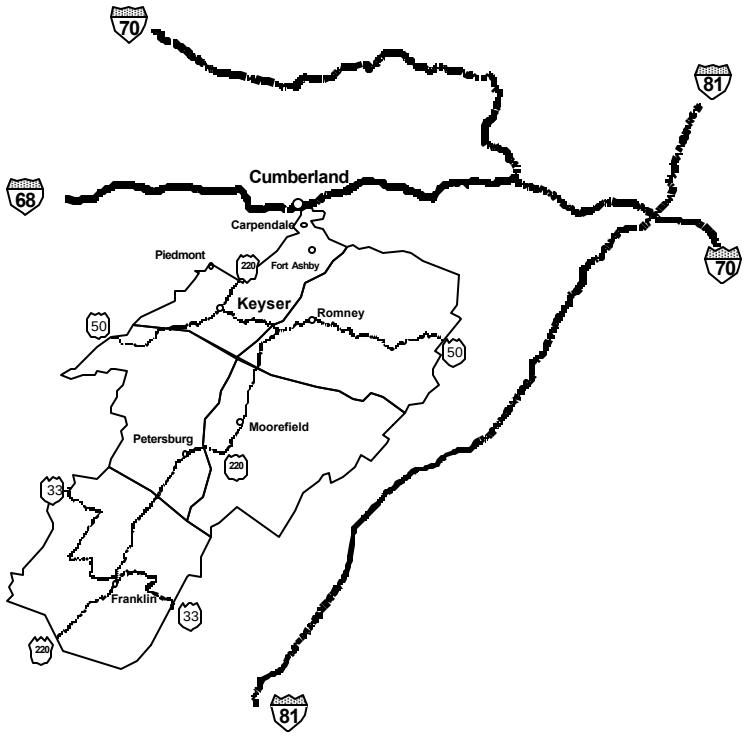
Figure 1
The Potomac Highlands Region



Major Cities in the Potomac Highlands Region

The map in Figure 2 displays the major cities and highways in the PHR. Major cities will be defined as those with a population exceeding 1,000 residents in 1998.

Figure 2
Major Cities and Highways in the Potomac Highlands Region



According to the United States Census Bureau, Keyser, located in Mineral County approximately 25 miles southwest of Cumberland, Maryland, is the PHR's largest city with 5,295 residents. Petersburg is located in the southeastern portion of Grant County and has a population of 2,825. Romney, located in Hampshire County, has a population of 2,300, while Moorefield, located in Hardy County, has a population of 2,359. Carpendale, located in Mineral County, is the only other city in the region with at least 1,000 residents, registering a total population of 1,140. All towns in Pendleton County have a population below 1,000 residents. Franklin is Pendleton County's largest town with 864 total residents.

Although there are no interstate highways located in the PHR, there are several located in the surrounding region. U.S. Interstate 68 is located just north of the region and runs east to west through adjacent counties in Maryland (Allegany and Garrett). U.S. Interstate 81 is located east of the region and runs north to south through several adjacent counties in Virginia (Augusta, Frederick, Rockingham, and Shenandoah).

There are three U.S. highways located in the region. U.S. 220 runs north to south through the PHR. From Cumberland, as U.S. 220 runs south, it passes through each of the region's major cities, except for Romney. U.S. 50 runs through the northern portion of the PHR, connecting Romney with Grafton, West Virginia to the west and Winchester City, Virginia and U.S. Interstate 81 to the east. U.S. 33 runs east to west through Pendleton County, connecting Franklin with Elkins, West Virginia to the west and Harrisonburg City, Virginia and U.S. Interstate 81 to the east.

Demographic Characteristics of the Potomac Highlands Region

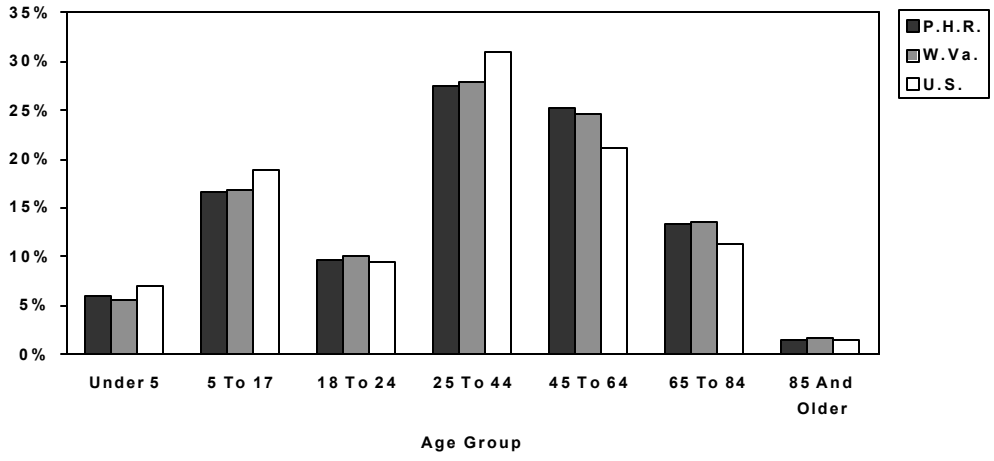
Understanding of a region's past, current, and future demographic structure is essential to economic development efforts. This section examines several properties of the PHR's population, with primary focus on changes in the region's age composition, historical trends in population, projected population growth, and migration patterns of PHR residents. Historical population data are obtained from the U.S. Bureau of the Census, while population projections are from the West Virginia University Regional Research Institute.

Population Trends and Projections

The population of the PHR in 1999 was 77,656, which accounted for approximately 4.3 percent of West Virginia's total resident population. Mineral County had the largest share of the PHR's total population with 27,069 (34.9 percent). Pendleton County had the region's smallest share in 1999 with 8,040 residents, or 10.4 percent of the PHR population. Grant, Hampshire, and Hardy counties had total resident populations of 11,140, 19,480, and 11,989, respectively.

As Figure 3 shows, From 1990 to 1998, the age distribution of the PHR's population closely

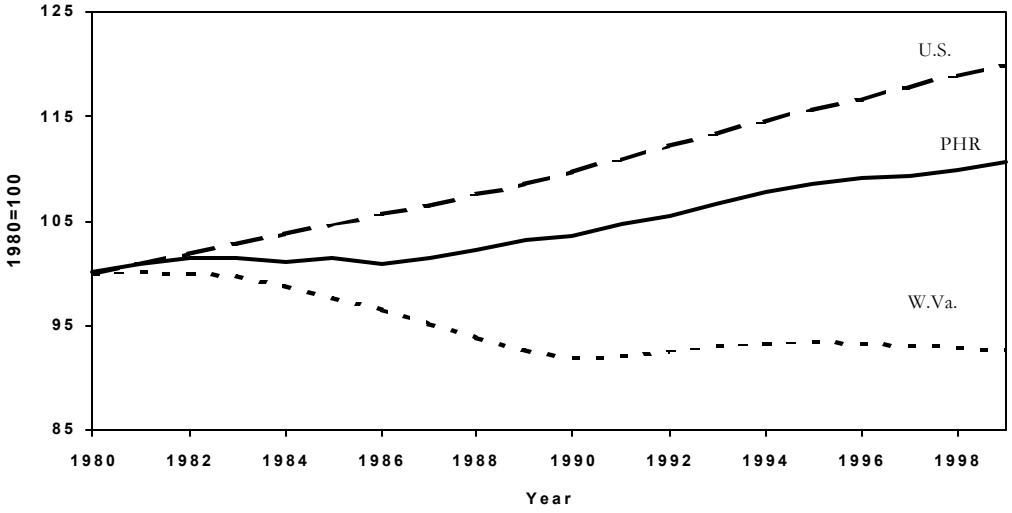
Figure 3
Population by Age Group: 1998



resembled that of West Virginia in nearly all age categories. Both areas had a greater share of their populations in the 45 to 64 and 65 to 84 age groups than the United States. The PHR and West Virginia also had somewhat smaller proportions of their respective populations in the 25 to 44 age group than the U.S.

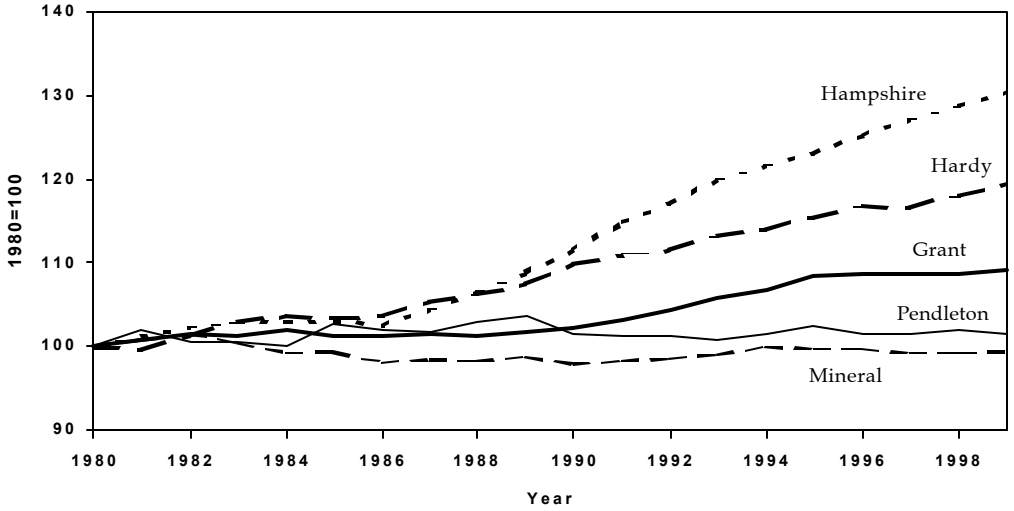
While the age distribution for West Virginia and the PHR are quite similar, the total population trend from 1980 to 1999 for each region are quite different. According to Figure 4, from 1980 to 1999 the PHR grew at a 0.5 percent average annual rate compared to -0.4 percent for West Virginia. During the early 1980s, the PHR experienced modest population gains (0.1 percent average annual growth). Since 1986 the PHR has shown steady population growth, increasing 0.7 annually. West Virginia, however, suffered substantial losses throughout the 1980s with a -0.8 percent average annual growth rate. During the 1990s West Virginia's population grew at a modest 0.1 percent annual rate.

Figure 4
Total Population of the PHR, U.S., & W.Va.: 1980-1999



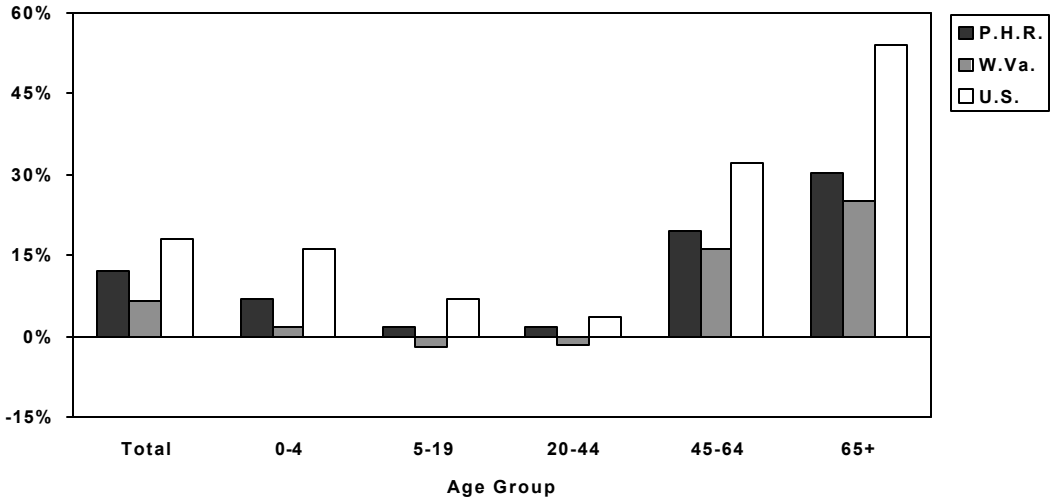
Population changes within the PHR counties varied little from 1980 to 1986. As Figure 5 shows, Hampshire and Hardy counties have grown at a rate faster than the PHR (1.9 percent and 1.1 percent annually) during the 1986-1999 time period. Grant, Mineral, and Pendleton counties grew at average annual growth rates of 0.6 percent, 0.1 percent, and 0.0 percent, respectively from 1986 to 1999.

Figure 5
Total Population of PHR Counties: 1980-1999



Population growth is projected to continue in the PHR for the next twenty years. According to Figure 6, the region's population is expected to outpace West Virginia's growth but lag behind the U.S. Nearly 90 percent of the PHR's projected population growth is attributed to high rates of growth in the oldest age groups (45-64 and 65 and over). Although West Virginia is projected to lose residents in the 5 to 19 and 20 to 44 age groups, the PHR is expected to experience modest gains in these two age groups.

Figure 6
Projected Population Change by Age Group: 2000-2020



Population growth within the PHR counties is also projected to continue for the next twenty years. Hampshire County is expected to lead the PHR in population growth by gaining over 4,000 residents (0.9 percent annually) during the 2000-2020 time period. Grant County is projected to increase by 2,414 residents (0.9 percent annually), while Hardy County is projected to gain 1,802 residents (0.7 percent annually). Mineral and Pendleton counties are projected to grow at the slowest rates (both at 0.4 percent annually) during the 2000-2020 time period.

Migration Patterns

Approximately 64 percent of people living in the PHR in 1990 had lived in the same house five years earlier. Sixty-four percent of West Virginia's residents lived in the same house in 1985, whereas nationally, only 53 percent of all residents lived in the same house in 1985. Fewer PHR residents than either West Virginia or the U.S. moved from elsewhere in the same state or county. The PHR had more residents moving from other states than West Virginia, but slightly fewer than the United States. The majority of those PHR residents living in another state in 1985 came from the South (79 percent), while the fewest came from the West and Midwest regions.

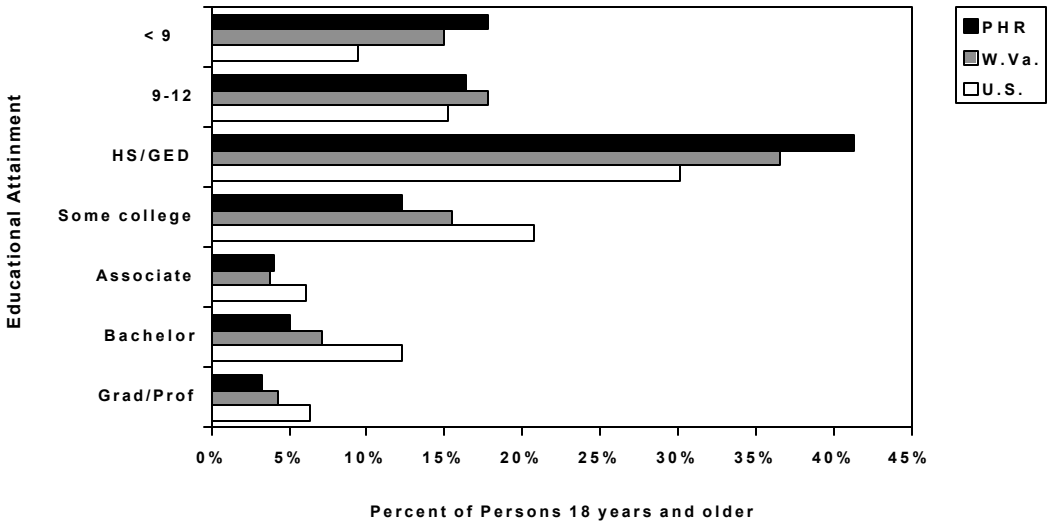
Educational Attainment

Measuring a region's level of educational attainment is important for several reasons. First, it provides businesses choosing to locate or expand its current facilities in that region the relative training and skills of the region's work force. Secondly, educational attainment data provide education policymakers the necessary insight on how to better serve a region's training and educational needs. This section outlines educational attainment data for the Potomac Highlands Region, the state, and the nation.

Potomac Highlands Region

According to Figure 7, the PHR had a markedly higher percentage of the population with a high school diploma (or equivalency) as its highest level of educational attainment. The region's relatively high percentage of adult population with a high school diploma or GED as the highest level of educational attainment is attributable to two possible factors: relatively few college educated adult residents or a low percentage of adult residents who received a high school equivalency. The PHR suffers from the former. The region lags West Virginia and the nation in nearly all levels of post-secondary educational attainment. Approximately 25 percent of the adult population had attended some type of post-secondary educational institution, compared to 31 percent for West Virginia and 45 percent for the United States.

Figure 7
Highest Level of Educational Attainment: 1990



In the PHR, 34 percent of the adult population did not have a high school diploma. This was only slightly higher than West Virginia (33 percent), but substantially higher than the United States' average of 25 percent.

Focus on Mineral County

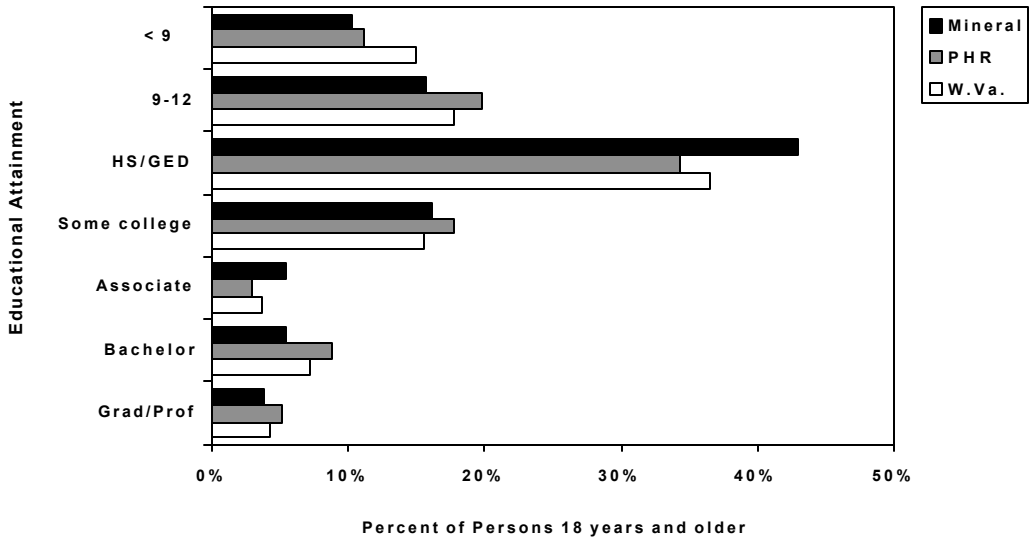
Of the counties located in the Potomac Highlands Region, Mineral County's educational attainment differs that of the region's other counties. Overall, there is an 8 percent difference between Mineral County and the PHR in adult residents who did not earn a high school diploma.

As shown in Figure 8, Mineral County had a higher percentage of adult residents holding a post-secondary educational degree, such as an associate's, bachelor's, or graduate/professional degree, than any other county in the PHR. This is primarily due to Mineral County containing Potomac State College, the region's only higher education institution in 1990.

School Enrollment

Total enrollment in primary and secondary schools provides important information to economic development practitioners and education planners and administrators. College educators may use secondary enrollment trends in their respective service areas to forecast the number of graduating high school seniors going on to college. Economic development

Figure 8
Educational Attainment of Mineral County: 1990



policy planners can supplement post-secondary educational enrollment data with high school graduates data to project potential entrants into the region's labor force.

Primary and Secondary Enrollment

Primary school enrollment (kindergarten through 6th grade) for the Potomac Highlands Region was 7,365 students for the 1999-2000 school year. Secondary enrollment (grades 7 through 12) was 5,977 students. As Figures 9 and 10 show, Mineral County had the

Figure 9
Primary School Enrollment: 1999-2000

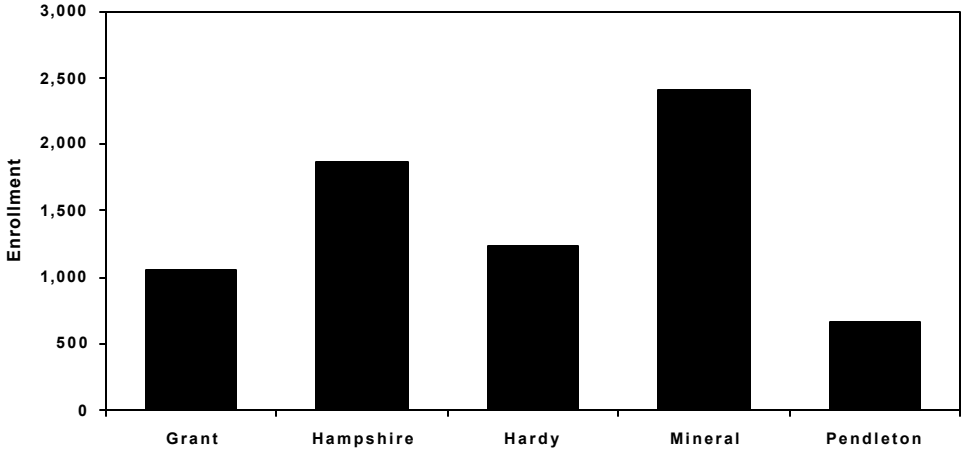
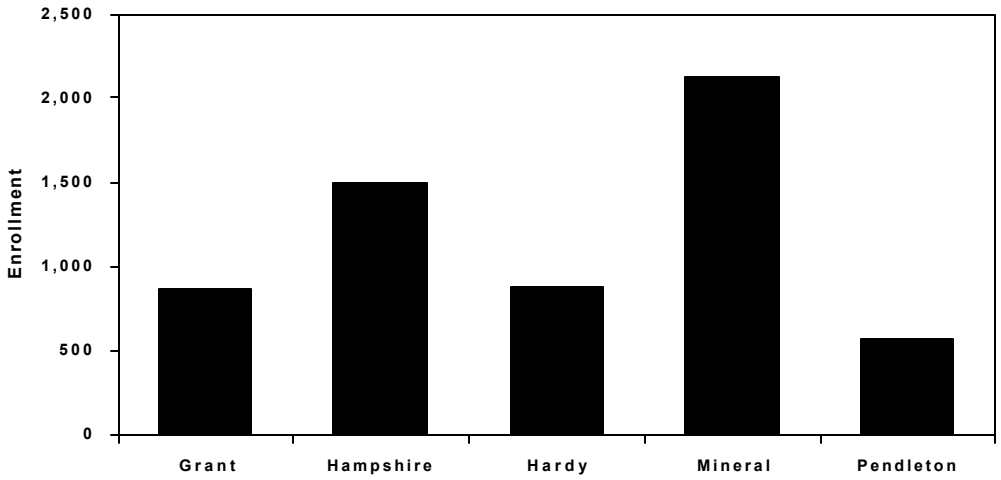


Figure 10
Secondary School Enrollment: 1999-2000

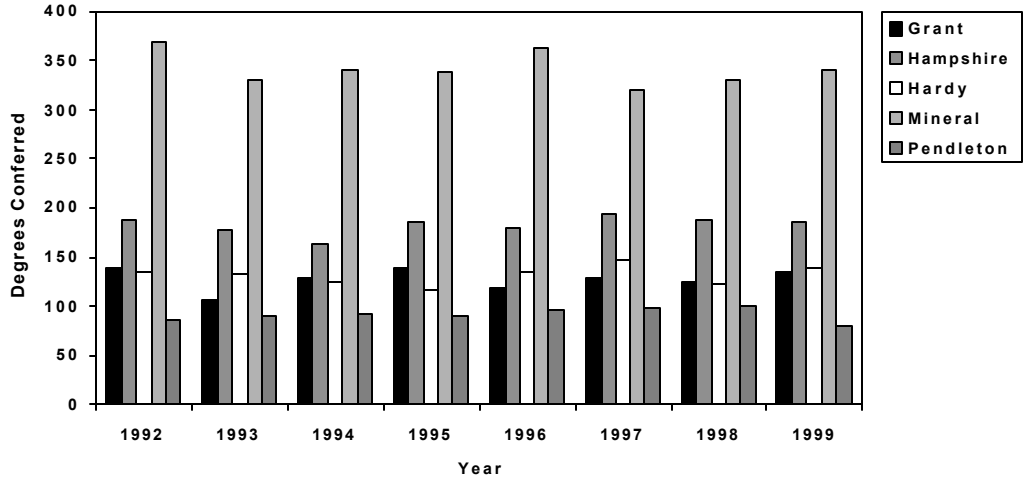


PHR's highest total enrollment, accounting for 35 percent (or 4,648 students) of the region's total enrollment of 13,342 students. Hampshire County had the second largest share of student enrollment in the PHR with 25 percent (or 3,371 students). Grant, Hardy, and Pendleton counties made up the remaining 40 percent of the region's total primary and secondary school enrollment.

Trends in Graduating High School Students

The number of high school diplomas earned in the PHR in 1999 was 881, 14 more than the previous year (Figure 11). In general, however, the number of students graduating from

Figure 11
High School Graduates: 1992-1999



West Virginia high schools has decreased over the past several years. From 1992 to 1999, the number of high school graduates in West Virginia has declined by approximately 1 percent. In the PHR, total high school graduates have declined by 4 percent during that same time period. Mineral County has experienced the largest decrease (8 percent) in the number of high school graduates while Hardy County was the only county in the PHR to experience an increase (5 percent) in high school graduates during the 1992 to 1999 time period.

Labor Force Statistics

This section provides detailed definitions of labor force statistics and their various components. Subsequently, the section displays labor force statistics and labor force participation rates for the PHR. Throughout the section, comparisons will be made between the PHR, West Virginia, and the United States.

Defining Labor Force Statistics

Labor force statistics are data collected to represent the civilian labor force, employment, unemployment, unemployment rate, and labor force participation rates of residents in a given area, such as a county, state, metropolitan area, or country. Labor force statistics are estimated each month and revised to a new benchmark each year. In general, the labor force data presented in this study are annual averages that have been benchmarked to 1998. Labor force participation rates come from the 1990 Census of Population and Housing.

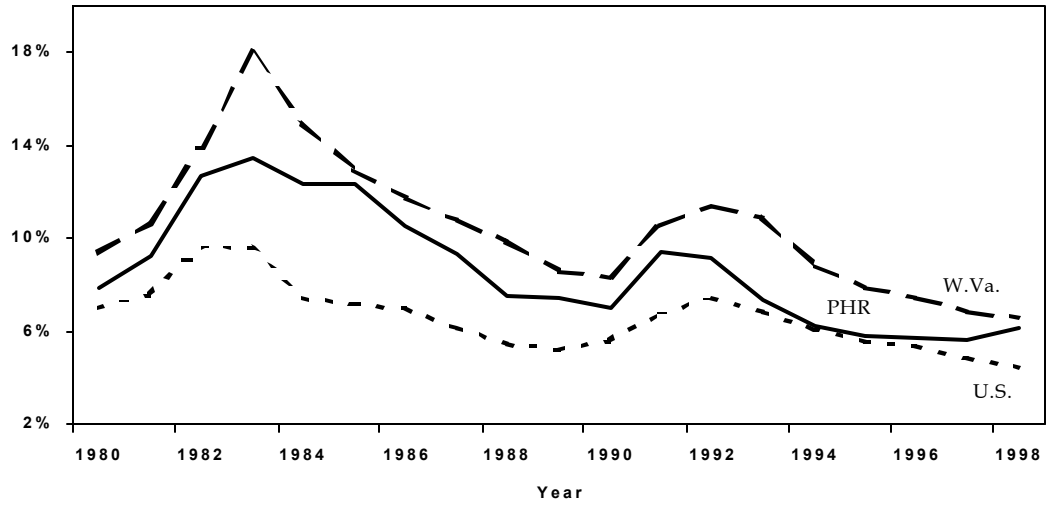
Civilian labor force refers to the non-institutionalized population 16 years and older who are currently employed or actively seeking and available for employment. Non-institutionalized residents are those who are not (1) patients of nursing homes and hospitals; (2) inmates of correctional or juvenile institutions; or (3) members of the armed forces. Employment data presented in this section refer to the number of residents in a county or region holding at least one job. Unemployment data measure the number of residents in a county or region who are actively seeking and available to take a job, but do not have one. The unemployment rate simply refers to the percentage of the civilian labor force that is unemployed. The labor force participation rate is the percentage of the labor force that is currently employed or actively seeking and available for employment.

Unemployment Rate

Since the 1980s, the Potomac Highlands Region has followed a pattern in the rate of unemployment similar to West Virginia and the United States. According to Figure 12, the PHR's unemployment rate reached a high of 13.5 percent in 1983. This event was mainly attributed to the deep national recession. The region did not suffer quite so extreme levels in the unemployment rate as the state, where the unemployment rate

reached 18.0 percent in 1983. As the figure clearly shows, the unemployment rates in West Virginia and the PHR rose to levels much higher than the national average, which peaked at 9.7 percent in 1982.

Figure 12
Unemployment Rate: 1980-1998

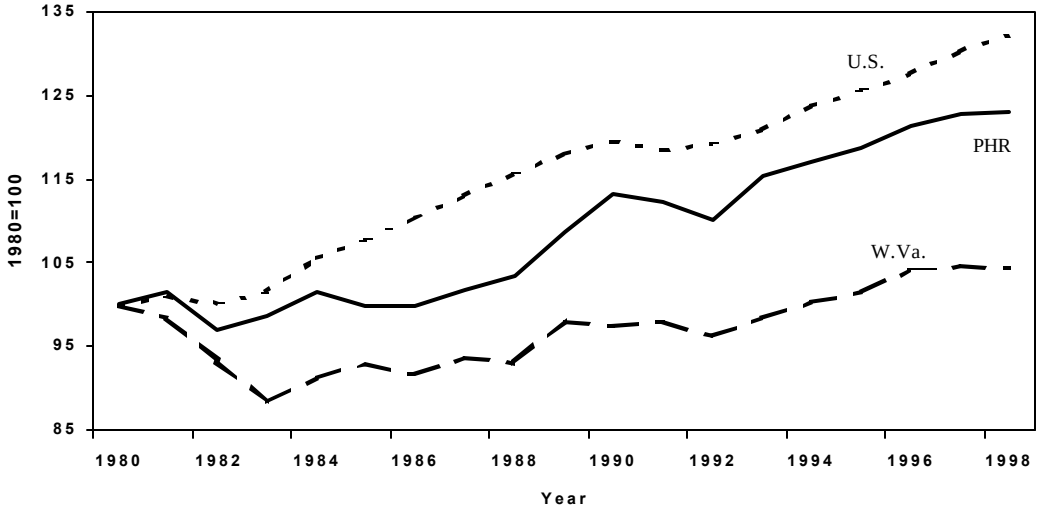


Gaps in the unemployment rate between the United States and Potomac Highlands Region widened during the recession. From 1980 and 1985 the percentage-points gap in the unemployment rate between the U.S. and PHR increased from 0.8 to 5.2. Since 1985, the PHR has experienced decreases in the unemployment rate in each year except for 1991 and 1998. The PHR came within 0.1 percentage points of the U.S. annual average unemployment in 1994. However, the gap in the unemployment rate between the U.S. and PHR has widened in each year since 1994, whereas the gap between West Virginia and the U.S. has remained fairly consistent since 1995.

Employed Residents

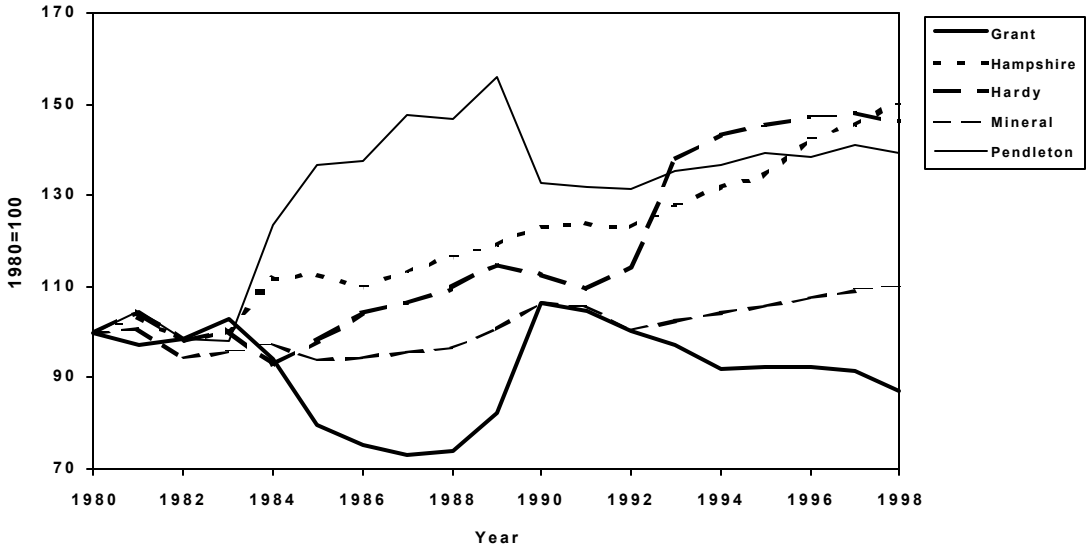
The number of employed residents in the PHR has grown quite steadily since 1980, increasing at annual average of 1.2 percent, compared to 0.3 percent for West Virginia and 1.6 percent for the United States (See Figure 13). However, as Figure 14 shows, the growth was not evenly distributed across the PHR counties. For example, between 1983 and 1989 it appears that Grant and Pendleton counties went in opposite directions. While employment in Pendleton County grew at an average annual rate of 8.1 percent, Grant County fell at an average annual rate of -3.7 percent.

Figure 13
Employed Residents: 1980-1998



Hampshire County has experienced the highest average annual rate of employment growth since 1980 (2.3 percent) followed by Hardy County (2.1 percent). Hardy County has experienced faster employment growth than Hampshire County since 1990, 3.3 percent versus 2.5 percent annually.

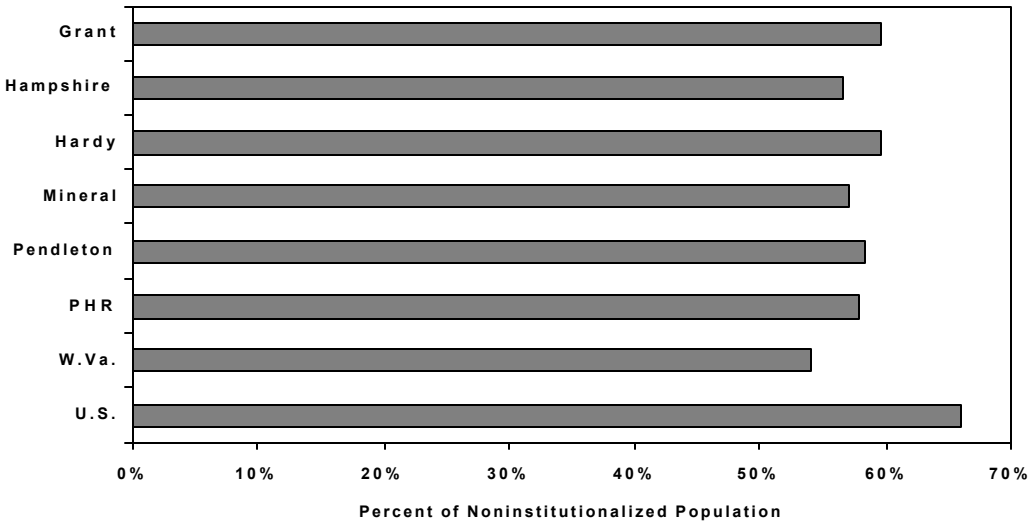
Figure 14
Employed Residents of the PHR Counties: 1990-1998



Labor Force Participation

Although the PHR's 1990 labor force participation rate (57.8 percent) exceeded West Virginia's (53.6 percent), it lagged well behind the nation's rate of 66.1 percent. At the county level, the labor force participation rates were similarly distributed to the region's overall rate (Figure 15). Grant and Hardy counties each had a labor force participation rate of 59.6 percent to lead the region, while Hampshire County had the lowest in the region with 56.6 percent.

Figure 15
Labor Force Participation Rates: 1990



Given that the population's distribution by age and sex differ between regions, it is beneficial to break down a region's labor force participation rate by these characteristics. For example, since the Potomac Highlands Region has a greater share of its population in the 65 and older age group than the nation, and the persons in that age group are generally retired, this may reduce the PHR's labor force participation. Differences between the labor force participation rates of males and females may also affect the relative differences between the PHR and other regions. Table 1 summarizes the differences in labor force participation rates for the "working age" population by gender. The disparity between the PHR's and United States' labor force participation rates can be partially attributed to the region's larger share of population over the age of 65.

Table 1
Labor Force Participation Rates by Sex and Age Group: 1990
(in percent)

Sex & Age Group	PHR	W.Va.	U.S.
Males & Females Age 16 and Over	57.8	53.6	66.1
Males & Females Age 16-64	68.9	64.2	76.1
Males Age 16 and Over	69.8	65.3	75.5
Males Age 16-64	80.6	75.7	84.5
Females Age 16 and Over	46.7	43.2	57.6
Females Age 16-64	57.4	53.3	68.1

Employment and Wages in the Potomac Highlands Region

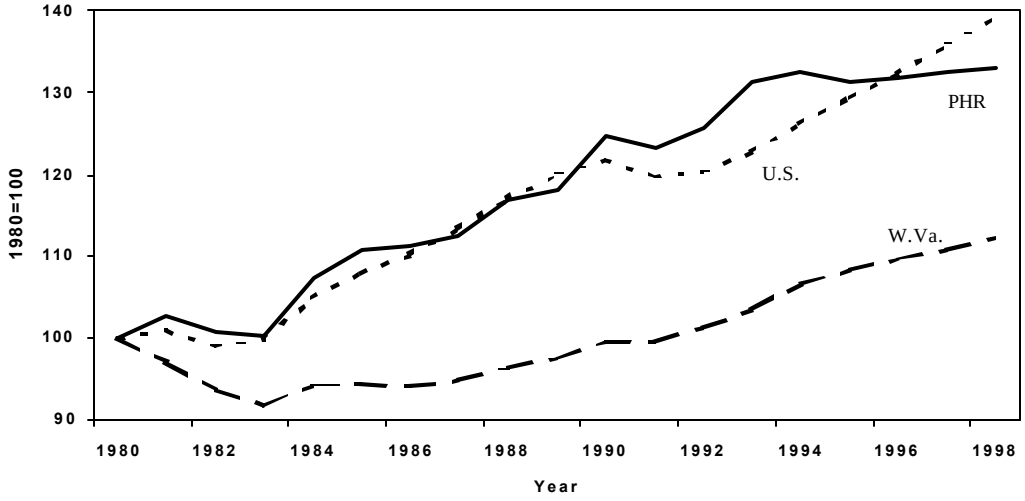
Varying growth patterns and differences in industry mixes have had varying effects on the Potomac Highlands Region and West Virginia. From 1980 to 1998, the PHR's total number of jobs has grown at an average annual rate of 1.6 percent, while West Virginia's has increased at a rate of 0.7 percent.

Employment data presented in this section are count of the jobs physically located within a geographic area, such as a county, state, or the nation. These data come from the West Virginia Bureau of Employment Programs and U.S. Bureau of Labor Statistics. The jobs data include firms with employment and payrolls covered by West Virginia Unemployment Compensation system. These data do not include railroad workers, the self-employed, student workers, most church workers, and unpaid family workers. Whereas labor force statistics estimate the total number of residents that have one or more jobs, covered employment and wages data presented here are a measure of jobs. Since resident employment is a count of residents with jobs, and one person may hold more than one job, the measures do not match.

Average Annual Employment in the PHR

Total employment in the Potomac Highlands Region has increased at a steady pace since the national recession of the early 1980s (see Figure 16). Although West Virginia was severely affected by this economic downturn, the PHR did not suffer quite as badly. While the state lost jobs at an average annual rate of -2.8 percent, the number of jobs in the PHR fluctuated only slightly from 1980 to 1983.

Figure 16
Total Jobs: 1980-1998



The recovery period for the PHR was also much shorter than the state after the recession. From 1983 to 1998 average annual employment increased at an annual rate of 1.9 percent, compared to 1.3 percent annually for the state. In recent years, however, the PHR has experienced a slower rate of job growth. From 1994 to 1998, the PHR has only realized a very modest 0.1 percent average annual job growth, while the state has increased at an average annual rate of 1.3 percent.

Industry Mix

The percentage of jobs within certain major industry divisions may help to explain the differences in employment growth of West Virginia, the United States, and the PHR. Figures 18 and 19 display the relative mixes of employment by major industry divisions for the PHR, West Virginia, and U.S. at two specific points in time, 1980 and 1998. In 1980, the PHR's employment was primarily concentrated in the mining, manufacturing and government industry divisions. The region's industry mix was similar to the state's in mining, construction, transportation, communications, and public utilities, and finance, insurance, and real estate. The PHR was substantially more concentrated than either the state or the nation in manufacturing, but less concentrated in the retail trade and service industries.

By 1998, the PHR had a significantly lower share of its total employment in the mining sector than in 1980, but maintained its concentration in the manufacturing sector when compared to the state and the nation. In addition, the region also increased its shares of total employment in the retail trade and service industries, but remained below the state and the nation.

Figure 17
Industry Mix in the PHR, W.Va., and U.S.: 1980

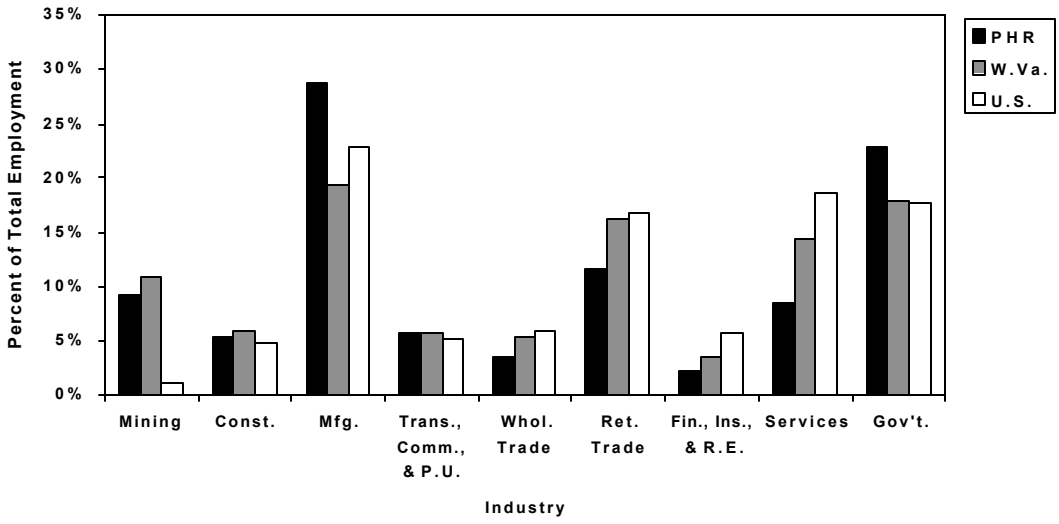
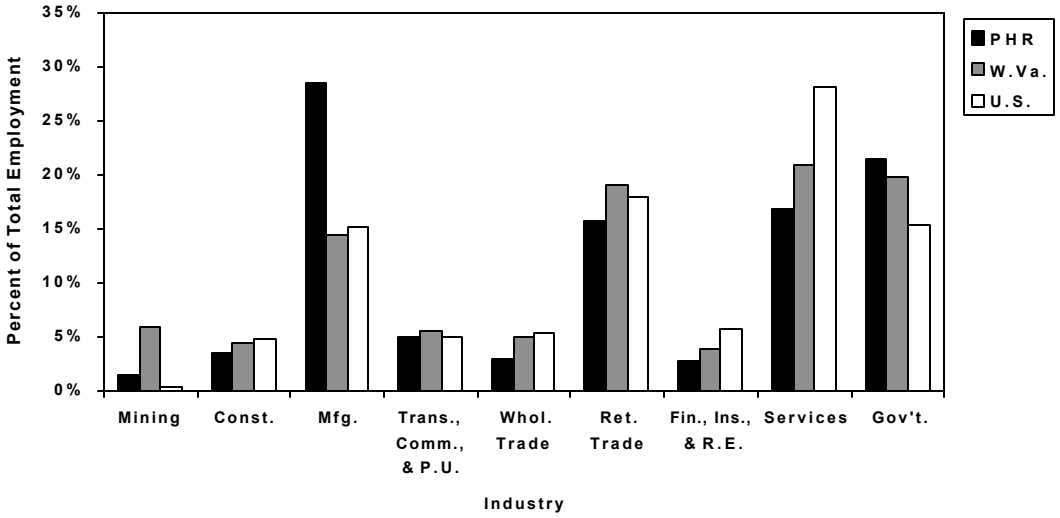


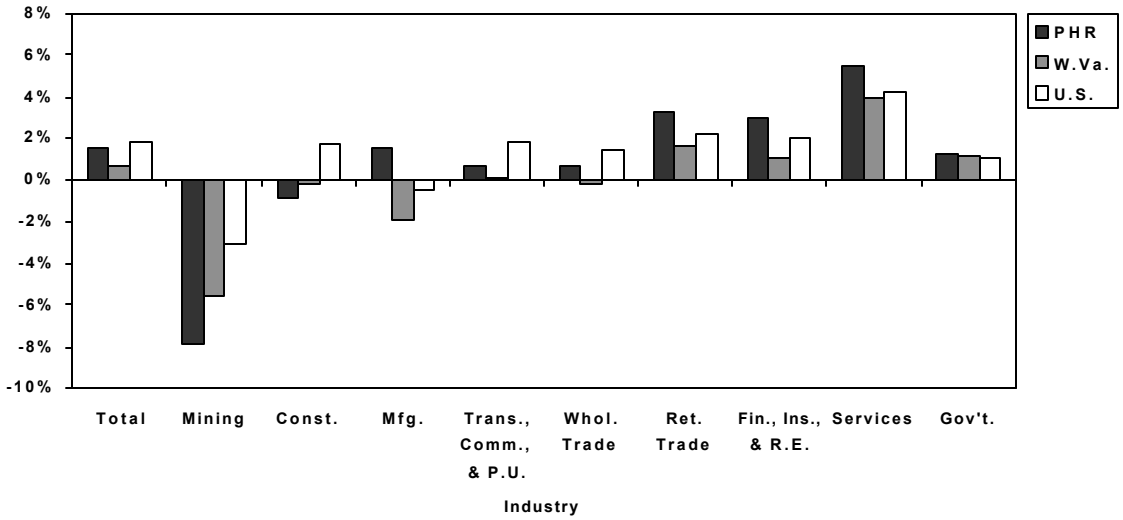
Figure 18
Industry Mix in the PHR, W.Va., and U.S.: 1998



Industry Growth: 1980-1998

Overall, the PHR's total employment increased at a faster pace than the state but slightly below that of the nation (see Figure 19). Despite losses at the state and national level, the PHR's manufacturing employment experienced a 1.6 percent average annual growth rate during the 1980-1998 time period. The PHR also outpaced the state and the nation in retail trade, finance, insurance, and real estate, services, and government. Transportation, communications, and public utilities and wholesale trade outpaced the state but grew

Figure 19
Average Annual Employment Growth by Major Division: 1980-1998

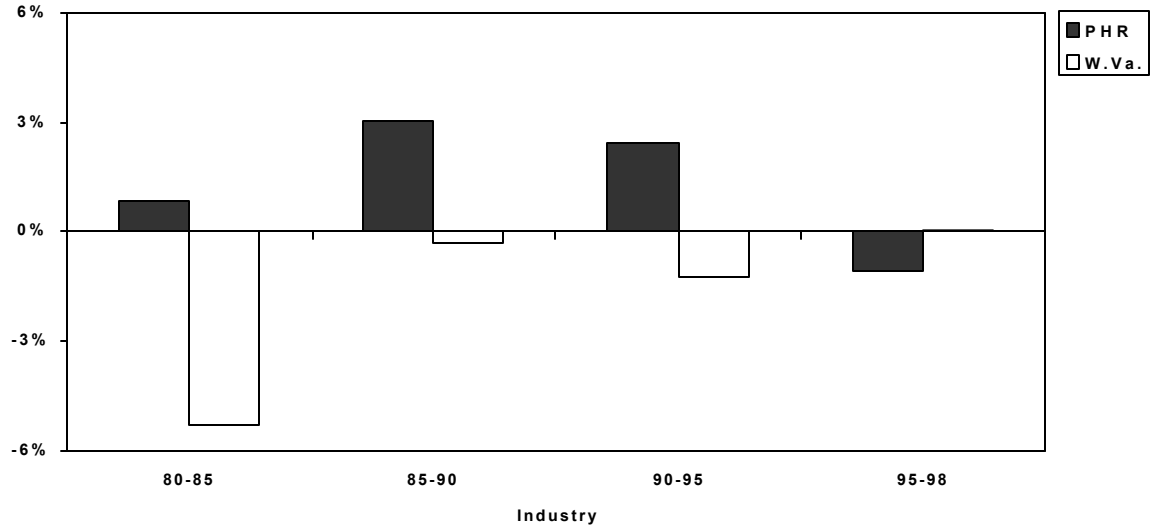


more slowly than the nation. On the other hand, the PHR suffered significant declines in mining employment during the 1980-1998 time period, losing jobs at an average annual rate of 7.9 percent, compared to a 5.5 percent average annual decline for the state. In addition, the region also experienced setbacks in the construction industry, where employment declined at an average annual rate of 0.8 percent.

Manufacturing Employment

From 1980-1998 the PHR's manufacturing industry contributed approximately 28 percent of the region's total job growth. Although the PHR has gained over 1,500 jobs during this time period, there have been several periods of positive growth but, more recently, periods of decline in manufacturing employment. Despite the presence of an economic downturn during the early 1980s, the PHR added approximately 200 manufacturing jobs from 1980 to 1985 (Figure 20). West Virginia, on the other hand, lost nearly 28,000 manufacturing jobs during this same period. Furthermore, the PHR grew at an even faster pace after recession. From 1985 to 1990, manufacturing employment in the region grew at a 3.0 percent average annual rate (or 780 jobs), while the state lost nearly 1,400 jobs (-0.3 percent average annual decline. The recession of the early 1990s did not seriously affect the PHR's manufacturing employment. The region's manufacturing employment increased at an average annual rate of 2.4 percent or 720 jobs from 1990 to 1995. West Virginia's manufacturing employment, however, continued to lose jobs, decreasing at a 1.2 percent average annual rate. More recently, however, the Potomac Highlands Region has lost employment in the manufacturing industry at an average annual rate of -1.1 percent.

Figure 20
Average Annual Employment Growth: Manufacturing

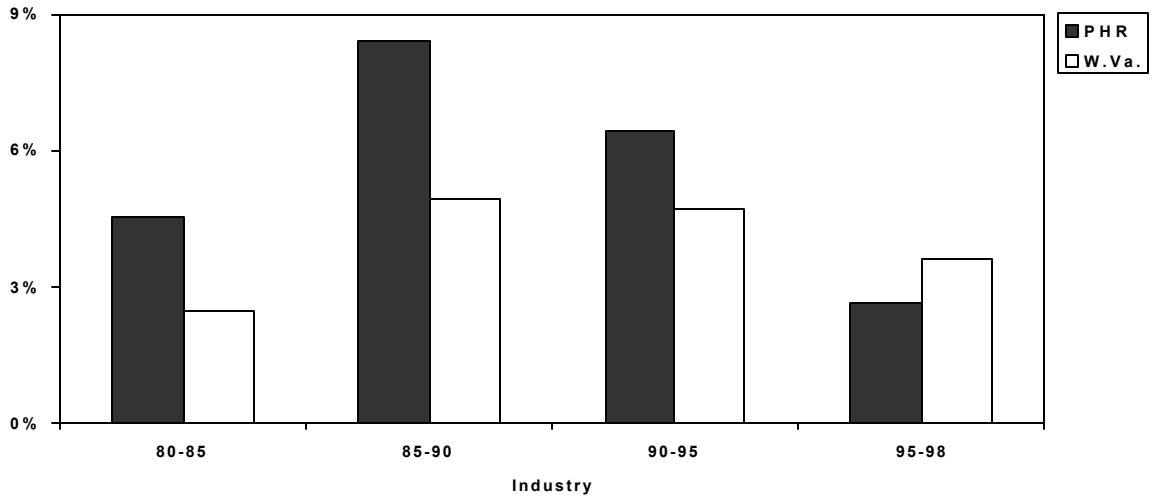


Employment gains in specific major manufacturing groups have accounted for the growth in the PHR's manufacturing industry over the 1980-1998 time period. For instance, while the West Virginia has lost employment in the food and kindred products sector, the PHR has experienced substantial gains in employment primarily due to growth in the region's poultry industry.

Services

From 1980 to 1998, the services industry grew at a faster pace than any other industry in the region. The service industry includes hotels and motels, business services, health services, engineering and management services, as well as other miscellaneous industries. In addition, job growth in the PHR's services industry outpaced services growth in the state and the nation. With job losses in mining and construction, the PHR had a substantially higher share of total employment in the services industry in 1998 than in 1980. The average annual growth rate of services from 1990-1998 was 5.0 percent. Services growth, however, became slower during the latter part of this time period. As shown in Figure 21, the average annual growth rate in services had exceeded that of the state in each period up to 1995. From 1995-1998 growth in the PHR's services industry decreased slightly, recording an average annual growth rate of 2.6 percent compared to 3.6 percent for the state.

Figure 21
Average Annual Employment Growth: Services



Health services is the PHR's largest services sector. Between 1980 and 1998 the health services sector had an average employment share of 40.3 percent of the total employment in the services industry. Additionally, health services contributed to 35.5 percent of the total growth of the services industry during the 1980-1998 time period. Social services was

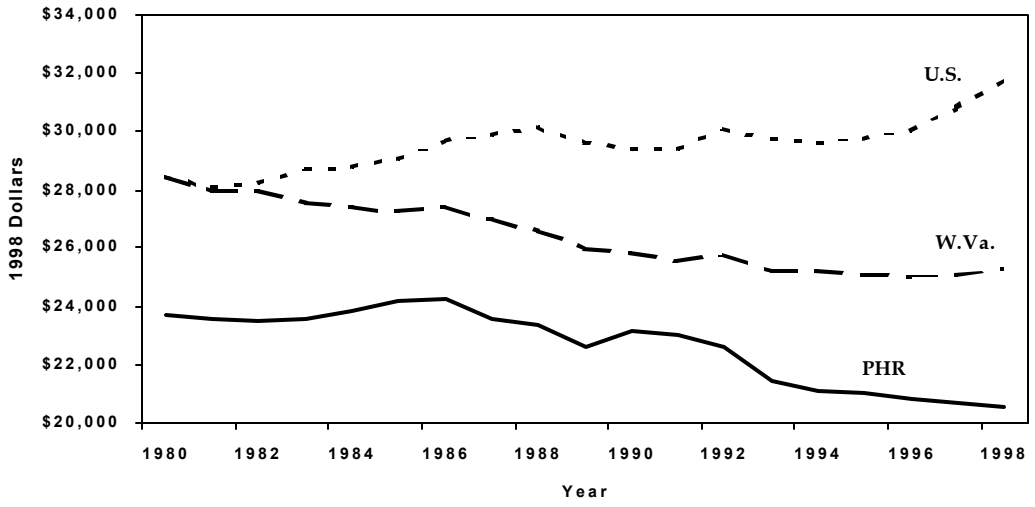
the other major services sector in 1998, accounting for 24.3 percent of all employment in the PHR's services industry.

Wages

Wage information shown below is for employees of firms participating in the West Virginia Unemployment Compensation system. Average annual wages are computed by the dividing total wages of all firms in a given industry and geographic area by the average annual employment of those firms in the industry. Real wages, shown in 1998 dollars, are calculated by dividing the average annual wages divided by the consumer price index for all urban consumers (indexed to 1998 = 100) from the Bureau of Labor Statistics.

As Figure 22 shows, although the PHR's average annual wages in nominal dollars have increased from $18,538 in 1980 to $20,518 in 1998 (0.6 percent), wages expressed in real dollars actually decreased from $23,761 to $20,518, or a 0.8 percent average annual rate of decline, from 1980 to 1998. West Virginia's real average annual wages also decreased, falling from $28,428 to $25,278 or -0.7 percent annually from 1980 to 1998. Nationally, however, real wages increased during the 1980-1998 time period, growing at a rate of 0.6 percent per year.

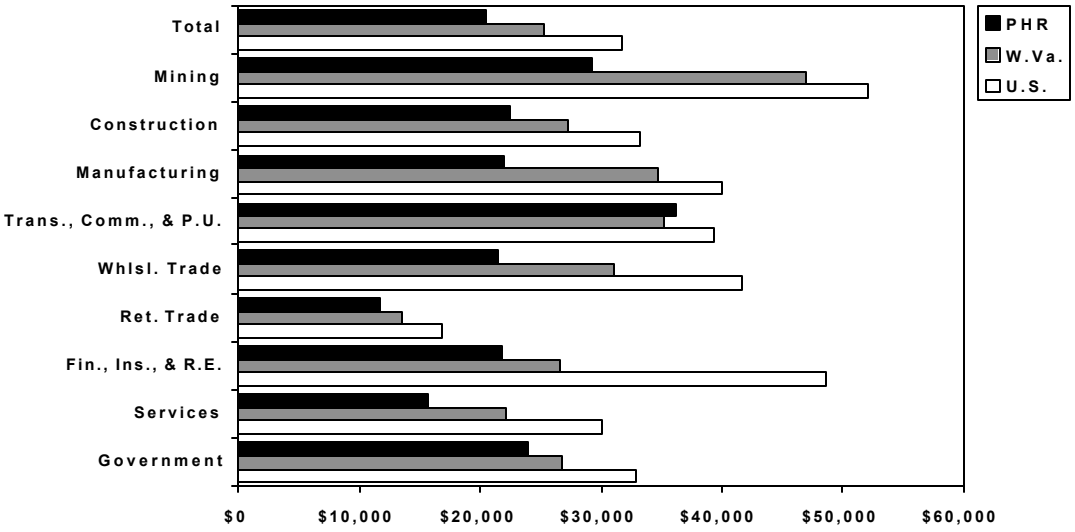
Figure 22
Real Average Annual Wages Per Worker - All Industries: 1980-1998



In general, the PHR lagged behind the state and the nation in average annual wages (in real and nominal dollars). The average annual wage rate in 1998 for the PHR was $20,518, while West Virginia and the United States registered average annual wage rates of $25,278 and $31,722, respectively. As Figure 23 shows, the PHR lagged behind both West Virginia

and the U.S. in average annual wage rates for all industries in 1998. The lone exception where the region had a higher average annual wage than the state (but lower than the nation) was the transportation, communications, and public utilities industry. Since this industry accounted for less than six percent of the region's total employment share, the higher wage rate had little effect on the PHR's overall wage rate.

Figure 23
Average Annual Wages Per Worker by Major Industry: 1998



Manufacturing and Service Industry Wages

Given their overall importance in the PHR's industrial composition, differences in wage rates between these industries in the region versus the state may offer some insight into the PHR's lower average annual wage rate. In terms of employment, manufacturing is the largest industry in the PHR, and thus has a significant impact on the region's overall wage rates. The PHR's average annual wage in manufacturing is approximately 7.4 percent higher than the total wage rate for the region, but is 36.7 percent lower than West Virginia's manufacturing industry and 12.8 percent lower than the state's overall wage rate.

The top 5 manufacturing sectors in 1998 for West Virginia in terms of average annual wages are: chemicals and allied products; primary metals; petroleum and coal products refining; transportation equipment; and fabricated metal products. Detailed employment and wage data provided by the West Virginia Bureau of Employment Programs indicated that none of these high paying sectors appear in the PHR. Significant sectors in the PHR, such as food and kindred products and lumber and wood products, still did not exceed the state's average annual wage rate. For example, the average annual wage rate for lumber and wood products (except furniture) was $20,440 for the PHR in 1998. The state, however, recorded a 1998 average annual wage rate of $21,918 in the lumber and wood products sector.

Average annual wage rates in the PHR's services industries lagged substantially behind the state. Overall, the 1998 service industry wage rate in the PHR was 41.7 percent lower than the state's average annual wage in the service industry, and 60.9 percent lower than the statewide average annual wage rate for all industries. The health services sector, which accounted for 6.4 percent of the PHR's total employment in 1998, had an average annual wage of $19,445 in the PHR compared to $28,734 across the state.

Occupations in the Potomac Highlands Region

According to the West Virginia Bureau of Employment Programs, the number of jobs in the Potomac Highlands Region is projected to increase at an average annual rate of 1.1 percent (2,745 jobs) between 1994 and 2005. Occupational employment data reveal that approximately 25 percent of all jobs in the PHR were in the operators, fabricators, and laborers occupational group.

Data presented in this section outline the number of jobs and average hourly wages in 1994 by occupational classification, as well as projections of the PHR's employment by occupation for 2005. In certain cases, comparisons will be made between the PHR, West Virginia, and the United States.

Blue Collar Occupations

Table 2 provides a description of the various codes used to classify occupational employment data. OES codes 80001 and 90000 are generally referred to as "blue-collar" occupations.

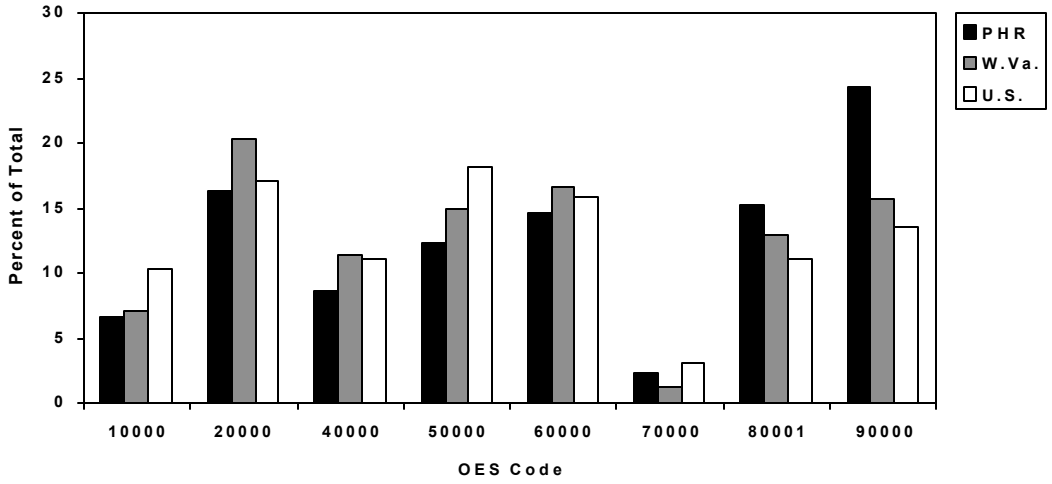
Table 2
Major Occupational Groups

OES Code	Major Occupational Group
10000	Executive, Administrative & Managerial Occupations
20000	Professional, Paraprofessional, Technicians
40000	Marketing & Sales Occupations
50000	Administrative Support Occupations, Clerical
60000	Service Occupations
70000	Agriculture, Forestry, Fishing Occupations
80001	Precision Production, Craft & Repair Occupations
90000	Operators, Fabricators, Laborers

According to Figure 24, approximately 40 percent of all occupations listed for the PHR were classified into these two specific occupational groups, making the PHR primarily a blue-collar occupation region. On the other hand, the PHR has a lower percentage of

workers than West Virginia or the United States in all but one occupational group, where the region has a higher percentage than the state, but a lower share than the nation.

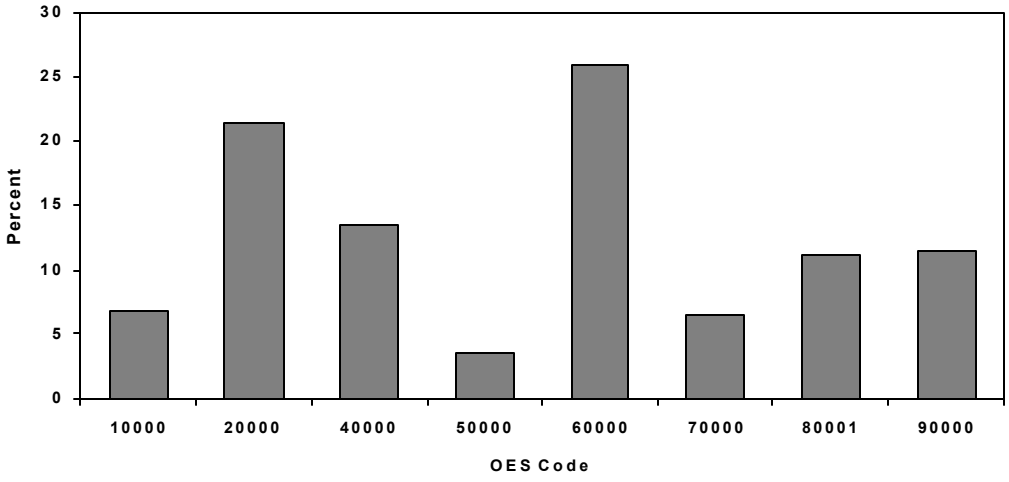
Figure 24
Employment by Major Occupational Group: 1994



Service Occupations

Between 1994 and 2005, service-related occupations are projected to account for nearly 26 percent of employment for the PHR. Figure 25 shows that service occupations are

Figure 25
Percent of Total Projected Employment Growth in the PHR: 1994-2005



projected to account for the most jobs, followed by professional, paraprofessional, and technical occupations, which account for 21 percent of projected employment growth.

Clerical and administrative support occupations will contribute the smallest percentage of new jobs in the region (3.5 percent).

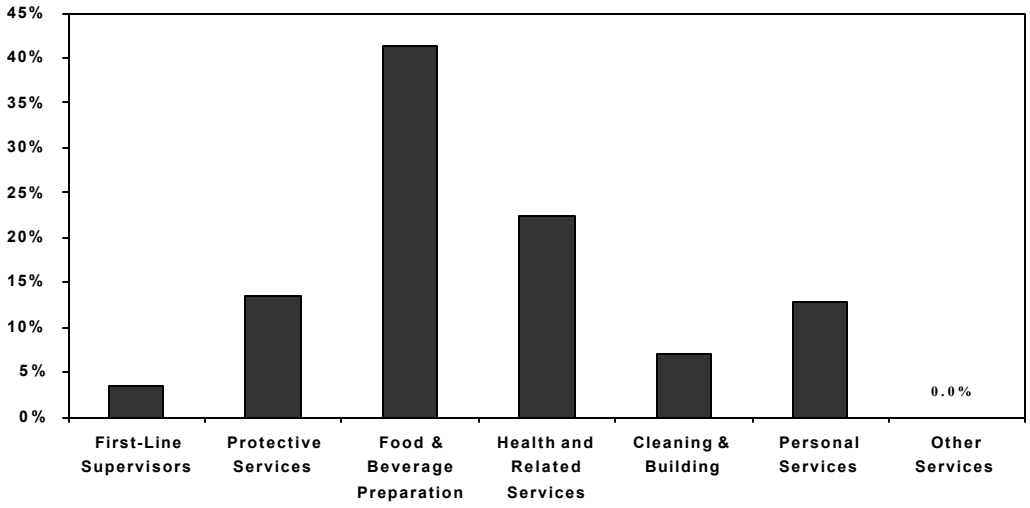
Since service occupations are projected to be the greatest contributor to employment growth in the PHR, it is worthwhile to examine the breakdown of occupations within the service occupational group (see Table 3).

Table 3
Occupations in the Services Occupational Group

OES Code	Occupational Category
61000	First Line Supervisors and Managers
63000	Protective Services
65000	Food and Beverage Preparation
66000	Health Services and Related Occupations
67000	Cleaning and Building Services
68000	Personal Services
69000	Other Service Occupations

As Figure 26 shows, over 41 percent of employment in the services occupational group will be contributed by the food and beverage preparation and service occupations. Occupations in this category include waiters and waitresses, cooks, bartenders, and hosts

Figure 26
Projected Services Occupational Employment
Growth in the PHR by Category: 1994-2005



and hostesses. Health services and related occupations are projected to account for 22 percent of new services jobs, while protective services and personal services occupations account for 13.3 and 12.7, respectively.

Fastest Growing Occupations

Table 4 shows that over the 1994 to 2005 time period, twenty occupations are projected to account for 50 percent of all new jobs in the region. While cashiers and retail salespersons are projected to have the largest absolute gains, 125 and 105 new jobs, respectively, service-related occupations are expected to contribute 32 percent of all new jobs in the region.

Table 4
Twenty Occupations with Largest Projected Employment Growth: 1994-2005

OES Code	Occupation	1994 Employment	2005 Employment	1994-2005 Change
49023	Cashiers	535	660	125
49011	Salespersons, Retail	495	600	105
97102	Truck Driver, Heavy	560	665	105
19005	General managers and Top Executives	540	645	105
65008	Waiters and Waitresses	195	290	95
92944	Cutting and Slicing Machine Operator/Tenders	195	270	75
87102	Carpenters	320	395	75
98035	Personal and Home Care Aides	105	175	70
98999	All other Helpers and laborers	740	810	70
66008	Nursing Aides and orderlies	355	425	70
65041	Food Preparation and Service Workers Fast Food	280	350	70
93956	All Other Assemblers and Fabricators	320	385	65
15026	Food Service and Lodging managers	95	150	55
66011	Home health Aides	125	175	50
65026	Cooks, Restaurant	110	155	45
41002	Marketing and Sales, Supervisors	335	380	45
51002	Clerical Supervisors	240	280	40
55108	Secretaries, Except legal and Medical	470	510	40
92974	Packaging and Filling Machine Operators	255	295	40
65038	Food Preparation Workers	155	195	40

Highest-Earning Occupations

Of the 20 highest-earning occupations listed in Table 5, only 8 percent of projected employment growth in the PHR occurs in these occupations. Since wage data are not available at the regional level, regional employment data are paired with statewide average annual wages by occupation. As listed in Table 5, Physicians receive the highest average annual wage statewide, but are only projected to add 5 positions between 1994 and 2005. Systems analysts jobs are projected to grow at the fastest rate, adding 25 jobs (7.8 percent average annual growth) during the 1994-2005 time period. General managers and top executives are forecast to gain the most new jobs (105), while locomotive engineers and first-line supervisors in construction are actually forecast to lose 10 jobs over the period. Communications, transportation, and utility managers are projected to decline at the fastest rate, decreasing by 2.5 percent from 1994 to 2005.

Table 5
Top Twenty Occupations in the PHR by State Hourly Wage: 1994

OES Code	Occupation	1994 Employment	2005 Employment	Average Hourly Wage (Statewide)
32102	Physicians and Surgeons	55	60	$44.04
13017	Engineering, Math, Natural Science Managers	20	30	$29.60
28108	Lawyers	55	80	$28.83
32517	Pharmacists	30	35	$26.71
15014	Industrial Production Managers	50	55	$23.27
15023	Communications, Transportation, and Utility Managers	20	15	$23.06
19005	General Managers and Top Executives	540	645	$23.00
97305	Locomotive Engineers	40	30	$22.95
22135	Mechanical Engineers	30	45	$22.71
15005	Education Administrators	55	55	$22.44
13002	Financial Managers	85	110	$21.87
13005	Personnel, Training, and Labor Managers	25	25	$21.15
25102	Systems Analysts	30	55	$20.05
81005	First-Line Supervisors, Construction	120	110	$20.02
15008	Medicine and Health Services Managers	35	35	$19.94
22121	Civil and Traffic Engineers	20	30	$19.68
13011	Marketing Advising Public Relations Managers	25	30	$19.61
81011	First-Line Supervisors, Transportation	55	50	$19.52
81002	First-Line Supervisors, Mechanic	95	100	$19.29
93102	Precision Aircraft Assemblers	25	30	$19.29

Commuting Patterns of the Potomac Highlands Region

Nearly 43 percent of the Potomac Highlands Region's (PHR) residents commuted from their county of residence to work in 1990. This is up from less than 25 percent of the residents in 1960. Improved roads contributed to the large increase of commuters. The PHR counties greatly exceed the state and nation in the proportion of residents commuting. Commuting data provided in this section were gathered from the 1990 Census of Population and Housing.

County-Level Commuting Patterns

Commuting patterns of residents is quite varied among the individual PHR counties. Table 6 shows the number of county residents that also worked in their own county, the number of residents that went outside their county to work, and the number of workers in the county that came from other counties. An examination of this table quickly indicates whether a county is a net importer or exporter of employed residents. For example, Grant County has 1,131 residents leaving the county to work, but has 2,012 residents from other counties coming into Grant County to work. Therefore, we Grant County is classified as a net importer of employed residents. All other counties in the region are net exporters of employed residents, which means they rely on other counties to provide jobs for their residents.

Table 6
Commuting Patterns: 1990

Geographic Area	Residents Working in Own County	Residents Working Outside Own County	Workers Coming From Other Counties
Grant	3,283	1,131	2,012
Hampshire	3,189	3,247	753
Hardy	3,183	1,600	890
Mineral	5,144	5,616	1,680
Pendleton	2,304	1,101	329
Potomac Highlands Region	17,103	12,695	5,664
West Virginia	486,317	172,819	NA
United States	87,587,677	27,482,597	NA

Mineral County exports the highest percentage of it resident workforce to other counties (52.2 percent), while Grant County exports the lowest percentage (25.6 percent). All of the counties within the PHR export a higher percentage of their resident workers than the national average of only 23.9 percent.

Labor Market Regions

Commuting patterns data are useful for developing and analyzing integrated labor market regions for creating strategic marketing studies, transportation planning, and regional economic development policies. Each county in the Potomac Highlands Region was assigned two Labor Market Regions (henceforth referred to as LMRs). The first LMR discussed is the In-Flow LMR and is individually determined by the counties that contribute workers to the destination county's total workforce. The second LMR, referred to as the Out-Flow LMR, is determined by the counties that a specific county's residents commute to for their jobs.

In-Flow LMRs

The In-Flow LMRs are made up of those counties that contributed at least 1 percent of the county's total workforce. Data provided for the In-Flow LMRs are specifically designed to provide demographic information about the persons in the counties from which the in-commuters originate. These data include such characteristics as population, population by age, civilian labor force, employed and unemployed residents, unemployment rates, and educational attainment of each county found in the In-Flow LMR.

In smaller regions such as the PHR, there is a potential for overlapping of the LMRs. As Table 7 shows, the In-Flow LMRs of each PHR county overlapped quite extensively. Allegany County, Maryland was the region's largest workforce contributor. Mineral County, for example, received 17.3 percent of its total workforce from Allegany County. In addition, Allegany County was also the most common contributor to each PHR county's LMR (3 out of 5).

Table 7
In-Flow Labor Market Region Counties: 1990

In-Flow Labor Market Region	Counties Included in LMR	% of Core County's Employment
Grant County In-Flow LMR	Grant County, WV	62.0%
	Mineral County, WV	7.5%
	Tucker County, WV	5.9%
	Garrett County, MD	5.5%
	Hardy County, WV	4.9%
	Pendleton County, WV	3.9%
	Preston County, WV	3.4%
	Randolph County, WV	1.9%
	Allegany County, MD	1.1%
Hampshire County In-Flow LMR	Hampshire County, WV	80.9%
	Mineral County, WV	9.5%
	Hardy County, WV	2.4%
	Allegany County, MD	2.3%
	Frederick County, VA	1.4%
	Harrison County, WV	1.0%
Hardy County In-Flow LMR	Hardy County, WV	78.1%
	Grant County, WV	9.1%
	Hampshire County, WV	5.7%
	Mineral County, WV	3.6%
	Pendleton County, WV	1.2%
Mineral County In-Flow LMR	Mineral County, WV	75.4%
	Allegany County, MD	17.3%
	Grant County, WV	1.6%
	Hampshire County, WV	1.4%
	Garrett County, MD	1.2%
Pendleton County In-Flow LMR	Pendleton County, WV	87.6%
	Grant County, WV	3.2%
	Highland County, VA	2.5%
	Pocahontas County, WV	1.7%

Table 8 provides a summary of labor force statistics for each of the In-Flow LMRs. Complete information on the LMRs and each of the counties within the region can be found in the Potomac Highlands Region Labor Market Study Database. The Hampshire and Hardy County In-Flow LMRs had the lowest unemployment rates in the region (6.2 percent), while the Mineral County In-Flow LMR registered the region's highest unemployment rate. The Hampshire County LMR had the region's largest civilian labor force followed by the Grant County LMR, which also had the highest level of unemployed residents.

Table 8
Labor Force Statistics for In-Flow Labor Market Regions: 1998 Annual Average

Inflow Labor market Region	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Grant LMR	104,106	95,432	8,684	8.3
Hampshire LMR	128,328	120,414	7,894	6.2
Hardy LMR	36,190	33,940	2,240	6.2
Mineral LMR	72,856	66,542	6,314	8.7
Pendleton LMR	13,837	12,834	1,003	7.2
West Virginia	800,000	747,000	53,000	6.6

Out-Flow LMRs

The Out-Flow LMRs consist of counties that attracted 1 percent or more of the residents from the base county to work in the out-flow county. Data presented for the Out-Flow LMRs should provide information of the major employers by industry and labor force statistics of the region. These data include employment by major industry division, civilian labor force, employed and unemployed residents, and the unemployment rate. Table 9 lists the counties that encompass the Out-Flow LMRs for each of the PHR counties.

Table 9
Out-Flow Labor Market Region Counties: 1990

Out-Flow Labor Market Region	Counties Included in LMR	% of Core County's Residents
Grant County Out-Flow LMR	Grant County, WV	74.4%
	Hardy County, WV	8.4%
	Garrett County, MD	3.6%
	Mineral County, WV	2.5%
	Allegany County, MD	2.0%
	Pendleton County, WV	1.9%
Hampshire County Out-Flow LMR	Hampshire County, WV	49.5%
	Frederick County, VA	27.8%
	Allegany County, MD	4.1%
	Hardy County, WV	3.6%
	Winchester city, VA	3.1%
	Mineral County, WV	1.5%
	Fairfax County, VA	1.4%
	Clarke County, VA	1.0%
Hardy County Out-Flow LMR	Hardy County, WV	66.5%
	Rockingham County, VA	6.6%
	Grant County, WV	5.5%
	Frederick County, VA	5.2%
	Shenandoah County, VA	5.2%
	Hampshire County, WV	2.0%
Mineral County Out-Flow LMR	Mineral County, WV	47.8%
	Allegany County, MD	35.3%
	Grant County, WV	3.7%
	Hampshire County, WV	3.5%
	Garrett County, MD	2.3%
	Hardy County, WV	1.4%
	Frederick County, VA	1.0%
Pendleton County Out-Flow LMR	Pendleton County, WV	67.7%
	Rockingham County, VA	17.6%
	Grant County, WV	6.1%
	Pocahontas County, WV	2.1%
	Hardy County, WV	1.5%
	Highland County, VA	1.1%

Table 10 provides a summary of each Out-Flow LMRs average annual employment by major industry for 1998. The Hampshire LMR was substantially larger than any other Out-Flow LMR in the region, with over 574,000 total jobs. This can be attributed to the presence of Fairfax County, Virginia, in the Out-Flow LMR. Manufacturing is the largest employer for the Hardy County LMR and Pendleton County LMR, by employing 35.8 percent and 38.9 percent of all workers in each LMR. In the remaining Out-Flow LMRs, services was the major source of employment. Mining accounted for the smallest share of average annual employment in each Out-Flow LMR.

Table 10
Employment by Major Industry for Out-Flow
Labor Market Regions: 1998 Annual Average

Industry Division	Grant LMR	Hampshire LMR	Hardy LMR	Mineral LMR	Pendleton LMR
Total	57,082	574,203	69,702	74,790	42,312
Mining	1,136	538	663	1,283	383
Construction	2,671	30,068	5,148	4,344	3,207
Manufacturing	11,540	38,743	24,973	15,569	16,228
Trans., Communications, & P.U.	2,362	29,752	2,830	3,239	1,653
Wholesale Trade	1,610	25,553	2,163	2,556	946
Retail Trade	11,876	97,479	9,306	14,248	5,017
Finance, Ins., & Real Estate	2,078	35,856	2,041	2,597	1,172
Services	12,987	235,215	10,535	16,245	6,321
Government	10,633	75,488	10,183	13,922	6,243